

ADMENDMENTS TO THE SPECIFICATION

Please replace the 3rd full paragraph on page 3 with the following amended paragraph:

Since the current-voltage characteristics of the fuel cell ~~depends~~ depend on the internal resistance of the fuel cell, the necessary amount of the reacting gas at a predetermined output state differs by the internal resistance of the fuel cell. The accurate setting of the reacting gas supply amount based on the properties of the fuel cell enables avoiding the gas shortage state of the fuel cell and enables supplying an optimum amount of the reacting gas.

Please replace the 4th full paragraph on page 3 with the following amended paragraph:

In the above fuel cell power supply unit, the current-voltage characteristics of the electric double layer capacitor ~~depends~~ depend on the internal resistance of the electric double layer capacitor.

Please replace the 3rd paragraph under the header “DETAILED DESCRIPTION OF THE INVENTION” on page 6 with the following amended paragraph:

The fuel cell power supply unit 10 according to one embodiment of the present invention is installed in a vehicle and functions as a power supply for driving the vehicle. The fuel cell power supply unit 10 is a hybrid-type power supply unit comprised of a fuel cell 1 and an electric double layer capacitor (hereinafter, simply called a capacitor) 2 both of which are connected in parallel. ~~Th~~The fuel cell power supply unit 10 supplies power to a traction motor 3 and the power of the traction motor 3 supplied from the fuel cell power supply unit 10 is transmitted to driving wheels through a reduction or a transmission T/M (not shown).

Please replace the last paragraph on page 7 with the following amended paragraph:

For example, the control device 4 calculates a target generation amount based on ~~signals~~ signal inputs as parameters such as an accelerator pedal opening signal concerning depression operation of the accelerator pedal by a driver, signals of the vehicle speed and a rotation

n speed of the motor, and signals of sensors associated with energy consumption of electrical auxiliary devices. The target generation amount obtained as described above is transmitted to the fuel cell power supply unit 10 as well as to the traction motor 3. The remaining charge of the capacitor 2 is calculated based on signals from sensors such as a voltage sensor or a current sensor (not shown), and the remaining charge of the capacitor is used as one of the parameters for controlling the fuel cell power supply unit 10.

Please replace the 2nd to last paragraph on page 10 with the following amended paragraph:

As shown in Figs. 7A and 7B, before the variation of electrical load, the voltage of the fuel cell power supply unit 10 is at an equivalent voltage of $V_{out} = V_{fc} - (R_{fc} \times I_1)$.

Please replace the last paragraph on page 10 with the following amended paragraph:

When the electrical load varies at time T_0 , the capacitor starts supplying the electric power corresponding to the variation of electrical load. However, the supplying of the electric power caused rapid increase of the capacitor current I_{cap} and the increased capacitor current I_{cap} originates a voltage drop ($\Delta V = R_{fc} \times I_{fc2} = R_{fc} \times I_{cap2}$). Thereafter, the output voltage V_{out} gradually decreases due to the discharge of the capacitor 2, and the output voltage V_{out} reaches a equilibrium state when the output voltage becomes $V_{out} = V_{fc} - (R_{fc} \times I_2)$. Accordingly, the time required to converge to the equilibrium state of $V_{out} = V_{fc} - (R_{fc} \times I_2)$ becomes longer when the capacitance of the capacitor 2 is larger. The voltage drop immediately after the variation of electrical load is smaller when the internal resistance of the capacitor 2 is smaller.

Please replace the 5th full paragraph on page 11 with the following amended paragraph:

Examples of the above-described characteristic values of the fuel cell include the output voltage and the internal resistance of the fuel cell 1 derived from the equation concerning the current-voltage characteristics ($V_{out} = V_{fc} - (R_{fc} \times I_{fc})$), and an example of the characteristic

value of the fuel cell system 30 includes the response speed of the reacting gas supply system to the fuel cell, which will be described later.

Please replace the 5th full paragraph on page 12 with the following amended paragraph:

As a result, when the output current is in a region ranging from I_1 to I_{L11} , the current-voltage characteristics of the fuel cell power supply unit 10 varies along the line B1 in Fig. 1, while when the output current is beyond I_{L11} , ~~the~~ the fuel cell power supply unit 10 shows the current-voltage characteristics of the capacitor as shown by the line D1. Note the current-voltage characteristics of the capacitor shown by the line D1 is expressed by, $V_{out} = V_{cap} - (I_{cap} \times R_{cap})$, wherein $R_{cap} > R_{fc}$ and V_{cap} is constant.

Please replace the 1st full paragraph on page 14 with the following amended paragraph:

The current-voltage characteristic line of the capacitor 2 is linear as shown by the line C2, following the equation of $V_{out} = (I_{cap} \times R_{cap})$, wherein the R_{cap} is constant. In addition, since $R_{cap} = R_{fc}$, the gradient of the line D2 is identical with that of the current-voltage characteristic line A.

Please replace the 4th full paragraph on page 15 with the following amended paragraph:

The current-voltage characteristics shown by line D3 is linear and is expressed by an equation, $V_{out} = V_{cap} - (I_{cap} \times R_{cap})$, wherein V_{cap} is constant. Since $R_{cap} < R_{fc}$, the line D3 show the most gentle gradient among current-voltage characteristic lines D1, D2 and D3, shown in Fig. 1 to Fig. 3.

Please replace the last full paragraph on page 15 with the following amended paragraph:

In contrast, the output voltage corresponding to an output current which is equilibrated with the amount of the reacting gas supplied to the fuel gas before the variation of electrical load is obtained as V_{L13} from the line A, the fuel cell 1 is capable of outputting the power until the output voltage of V_{L13} . In addition, the allowable output variation $\Delta V'$ for the fuel cell 1 for the

variation of electrical load from I_1 to I_2 is obtained as the value as shown $\Delta V'$ in Fig. 3. As a result, after the variation of electrical load, even if a voltage drop ~~ΔV~~ ΔV is generated due to the internal resistance R_{cap} of the capacitance, since the reacting gas is supplied in excess in advance for covering the voltage drop, it is possible to prevent the vehicle from entering into the gas shortage state.

Please replace the 1st full paragraph on page 18 with the following amended paragraph:

Next, the relationship between the electrostatic capacitance of the capacitor 2 and the response characteristics of the reacting gas supply unit for supplying the reacting gas to the fuel cell 1 with reference to Figs. 13A to 13C. The fuel supply unit comprises the fuel cell 1 and the peripheral devices such as air compressor 11. The peripheral devices practically include the compressor ~~12~~11, heat exchanger 13, high pressure hydrogen tank 18, electric-operated shutoff valve 19, regulator 17, ejector 20, demister 21, and humidifier 15.

Please replace the last full paragraph on page 21 with the following amended paragraph:

The reasons for setting such correction is that if the width of the variation of electrical load exceeds the predetermined width of the variation of electrical load ~~ΔI~~ ΔI , the fuel cell 1 can not output a required amount of output power, which results in entering into the gas shortage state in the fuel cell.

Please replace the 1st paragraph on page 23 with the following amended paragraph:

As described above, although the present unit practically includes the current limiting device between the fuel ~~cell~~cell 1 and the capacitor 2, the current limiting device does not execute the switching operation when the power supply unit is used in the actual driving operations as described above. Thus, in the actual driving operation, the fuel cell power supply unit operates as if the current limiting device does not ~~exists~~ exist.